



# Launch Mission Execution Forecast



**Mission:** Falcon 9 IXPE

**Issued:** 7 Dec 2021 / 0800L (1300Z)

**Valid:** 9 Dec 2021 / 0100 – 0230L (0600 – 0730Z)

**Forecast Discussion:** A weak boundary over Central Florida will be pulled north by a developing low pressure area. This system will move along the Atlantic Seaboard tomorrow as a high pressure builds back into the Space Coast. Expect only a slight increase in cloud coverage and precipitation chances today and Wednesday as the Spaceport is on the trailing end of this boundary. Upper-level winds will be near 100 knots at 40,000 feet, slightly increasing the risk for wind shear issues. The launch concern is cumulus clouds associated with the weak boundary near the Spaceport.

Space Coast weather remains much the same for the back-up opportunity as high pressure also moves northeast along the US coast, switching winds from the southeast. Upper-level winds will decrease over the launch area, lessening the impact of upper-level shear. The launch weather concerns remain a slight chance for cumulus clouds due to the onshore flow and the addition of a thick cloud layer associated with the boundary remnants.

Launch Day	Probability of Violating Weather Constraints					
	<b>10%</b>	Primary Concerns: Cumulus Cloud Rule				
	Weather Conditions				Additional Risk Criteria	
	<b>Weather/Visibility:</b> Isold Shower / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low-Mod	
<b>Temp/Humidity:</b> 67°F / 92%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Low	
<b>Liftoff Winds (200'):</b> 290° 10 - 15 mph	Cumulus	Few	3,000	10,000	<b>Solar Activity:</b> Low	
	Cirrostratus	Scattered	28,000	30,000		
24-Hour Delay	Probability of Violating Weather Constraints					
	<b>20%</b>	Primary Concerns: Cumulus Cloud Rule, Thick Cloud Layer Rule				
	Weather Conditions				Additional Risk Criteria	
	<b>Weather/Visibility:</b> Isold Shower / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low	
<b>Temp/Humidity:</b> 70°F / 95%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Low	
<b>Liftoff Winds (200'):</b> 120° 8 - 12 mph	Cumulus	Few	3,000	10,000	<b>Solar Activity:</b> Low	
	Altostratus	Scattered	12,000	15,000		

**Note:** The Probability of Violation (POV) is the chance that a Lightning Launch Commit Criteria (LLCC) or certain user constraints (surface winds, precipitation, and temperatures, etc.) will be violated during the launch window. It does not take into account upper-level wind shear, booster recovery weather, and solar activity.

**Next Forecast Will Be Issued** | As Required